

ENGLISH

**MF-7500
INSTRUCTION MANUAL**

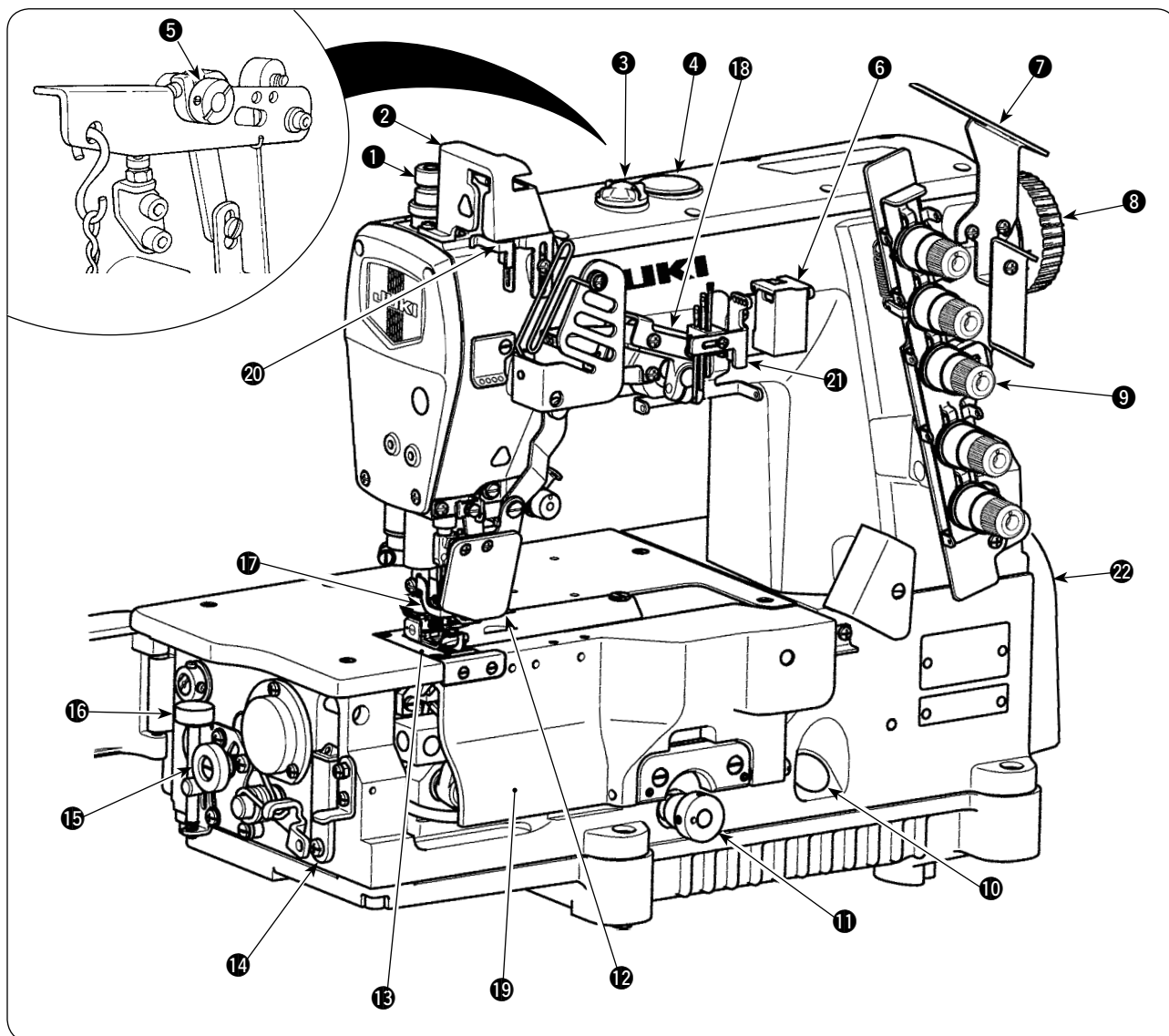
CONTENTS

I . SPECIFICATIONS	1
II . CONFIGURATION OF THE MACHINE COMPONENTS	2
III . INSTALLATION.....	3
1. Installing the machine head onto the table.....	3
2. Selecting the motor pulley and the belt.....	7
3. Installing the motor	7
4. Setting the belt.....	7
5. Installing the belt cover.....	8
6. Installing the chain	8
7. Installing the thread guide.....	8
8.Installing the needle bar thread take-up cover	9
IV . LUBRICATION AND OILING	9
1. Lubricating oil.....	9
2. Oiling.....	10
3. Silicon oil lubricating unit.....	10
V . OPERATION.....	11
1. Needle	11
2. Attaching the needle	11
3. Threading the machine head.....	12
4. Adjusting the stitch length	13
5. Adjusting the differential feed ratio	13
6. Adjusting the presser foot pressure	14
7. Adjusting the thread tension	14
VI. ADJUSTING THE SEWING MACHINE.....	15
1. Adjusting the silicon container thread guide.....	15
2. Adjusting the needle bar thread take-up thread receiver	15
3. Adjusting the rocking thread take-up	16
4. Adjusting the spreader thread guide.....	16
5. Adjusting the looper thread cam.....	16
6. Adjusting the looper thread cam eyelet	17
7. Adjusting the looper.....	17
8. Adjusting the height of the needle.....	18
9. Adjusting the rear needle guard.....	18
10. Relation between the rocking thread take-up timing and the needle thread loop.....	19
(1) Adjustment by means of the crank.....	19
(2) Adjustment by the eccentric cam	19
11. Adjusting the height of the feed dog	20
12. Installing position of the spreader	20
13. Adjusting the spreader thread guide and the needle clamp thread guide.....	21
14. Adjusting the front needle guard	21
15. Adjusting the presser foot lift	22
16. Adjusting the micro-lifter	22
17.Adjusting the feed locus.....	23
(1) Changing the feed driving movement.....	23
(2) Changing the feed rock movement	24
(3) Restoring to the standard adjustment	24
18. Adjustment value of balloon.....	25
VII. MAINTENANCE	27
1. Cleaning the sewing machine	27
2. Replacing the lubricating oil.....	27
3. Inspeping and replacing the oil filter	27

I . SPECIFICATIONS

Model name	High-speed, flat-bed coverstitch machine
Model	MF-7500 series
Stitch type	ISO standard 406, 407, 602, and 605
Example of application	Hemming and covering for knits and general knitted fabrics
Sewing speed	Max. 6,500 sti/min (during intermittent operation) V-belt type 6,000 sti/min (during intermittent operation) Direct-drive type Factory-set sewing speed at the time of shipment. 4,500 sti/min (during intermittent operation)
Needle gauge	3-needle ... 4.8 mm, 5.6 mm, and 6.4 mm 2-needle ... 3.2 mm and 4.0 mm
Differential feed ratio	1 : 0.7 to 1 : 2 (stitch length : less than 2.5 mm) Micro-differential feed adjustment mechanism is provided. (Micro-adjustment)
Stitch length	1.2 mm to 3.6 mm (can be adjusted up to 4.4 mm)
Needle	UY128GAS #9S to #14S (standard #10S)
Needle bar stroke	31mm (or 33 mm when changing over the eccentric pin)
Dimensions	(Height) 451 x (Width) 515 x (Length) 263
Weight	46kg
Lift of presser foot	8 mm (needle gauge : 5.6 mm without top covering), and 5 mm (with top covering) Micro-lifter mechanism is provided.
Feed adjustment method	Main feed ... dial type stitch pitch adjustment method Differential feed ... lever adjustment method (micro-adjustment mechanism is provided.)
Looper mechanism	Spherical rod drive method
Lubricating system	Forced lubrication method by gear pump
Lubricating oil	JUKI GENUINE OIL 18
Oil reservoir capacity	Oil gauge lower line : 600 cc to upper line : 900 cc
Installation	Semi-submerged type
Noise	- Equivalent continuous emission sound pressure level (L_{pA}) at the workstation : A-weighted value of 76.5 dB; (Includes $K_{pA} = 2.5$ dB); according to ISO 10821- C.6.2 -ISO 11204 GR2 at 4,500 sti/min.

II. CONFIGURATION OF THE MACHINE COMPONENTS



- | | | | | | | | | | | | | | | | | | | | | | |
|----------------------------|-----------------------------------|--------------------------------------|----------------|----------------|--|----------------------|----------------|----------------------|-------------|------------------------|-------------------|----------------|---|-------------------------|-------------------------|----------------|--------------------------|---------------|------------------------------------|----------------------------------|--------------|
| ❶ Presser spring regulator | ❷ Needle bar thread take-up cover | ❸ Oil circulation inspection windows | ❹ Oil hole cap | ❺ Micro-lifter | ❻ Needle thread silicon oil lubricating unit | ❼ Thread guide No. 1 | ❽ Upper pulley | ❾ Thread tension nut | ❿ Oil gauge | ⓫ Feed regulating knob | ⓬ Eye guard cover | ⓭ Throat plate | ⓮ Needle tip silicon oil lubricating unit | ⓯ Differential lock nut | ⓰ Micro-adjustment knob | ⓱ Finger guard | ⓲ Rocking thread take-up | ⓳ Front cover | ⓴ Needle bar thread take-up thread | ⓵ Silicon container thread guide | ⓶ Belt cover |
|----------------------------|-----------------------------------|--------------------------------------|----------------|----------------|--|----------------------|----------------|----------------------|-------------|------------------------|-------------------|----------------|---|-------------------------|-------------------------|----------------|--------------------------|---------------|------------------------------------|----------------------------------|--------------|

III. INSTALLATION



WARNING :

Do not insert the power plug of the motor into the receptacle until all works have been completed. There is a danger of injury by being caught in the machine.

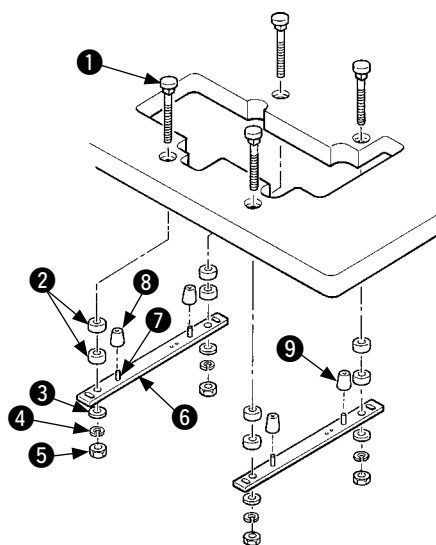
1. Installing the machine head onto the table



WARNING :

The weight of the sewing machine is more than 46 kg. Be sure to perform the work with two persons or more in case of unpacking, transportation or installation.

Semi-submerged type

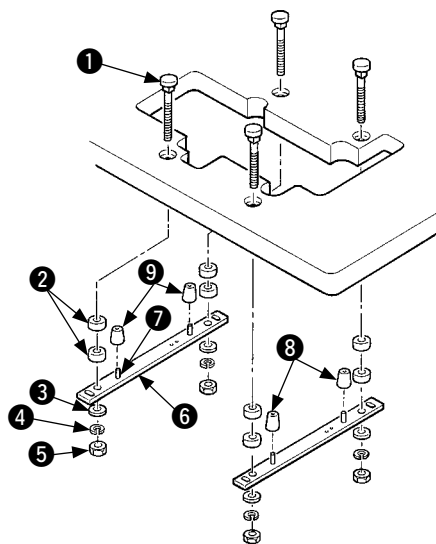


[For the V-belt type]

Attach the supporting board and the rubber seats as shown in the illustration and properly install the sewing machine.

- ① Bolt
- ② Spacer
- ③ Washer
- ④ Spring washer
- ⑤ Nut
- ⑥ Supporting board
- ⑦ Spring pin
- ⑧ Rubber cushion (Black) × 3
- ⑨ Rubber cushion (Gray) × 1

Semi-submerged type

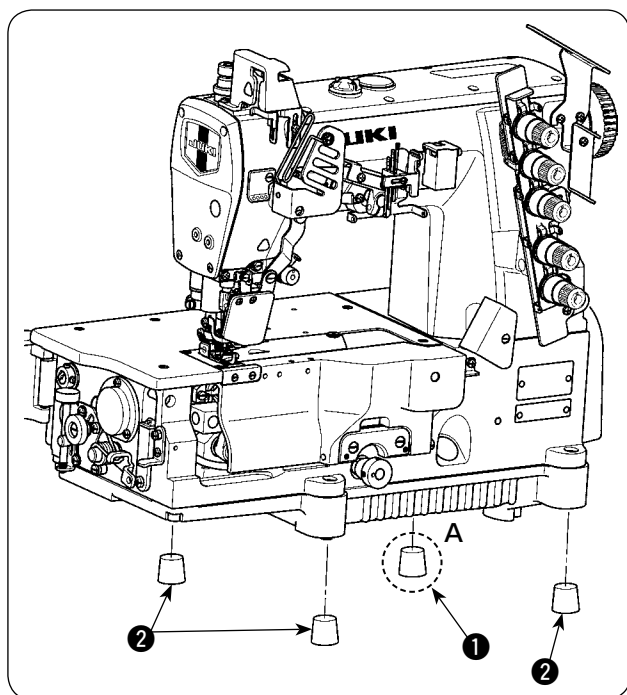


[For the direct-drive type]

Attach the supporting board and the rubber seats as shown in the illustration and properly install the sewing machine.

- ① Bolt
- ② Spacer
- ③ Washer
- ④ Spring washer
- ⑤ Nut
- ⑥ Supporting board
- ⑦ Spring pin
- ⑧ Rubber cushion (Black) × 2
- ⑨ Rubber cushion (Gray) × 2

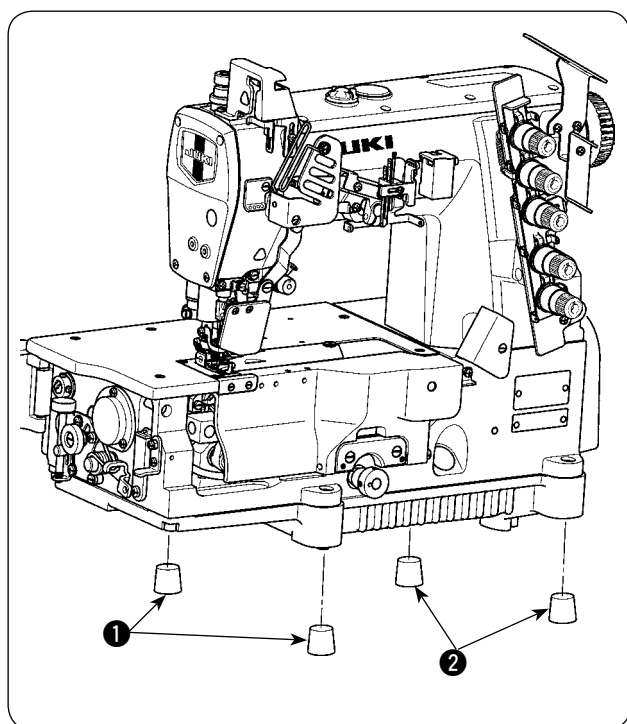
■ Installing the rubber cushion



Install the gray dust-proof rubber to section A only.

[For the V-belt type]

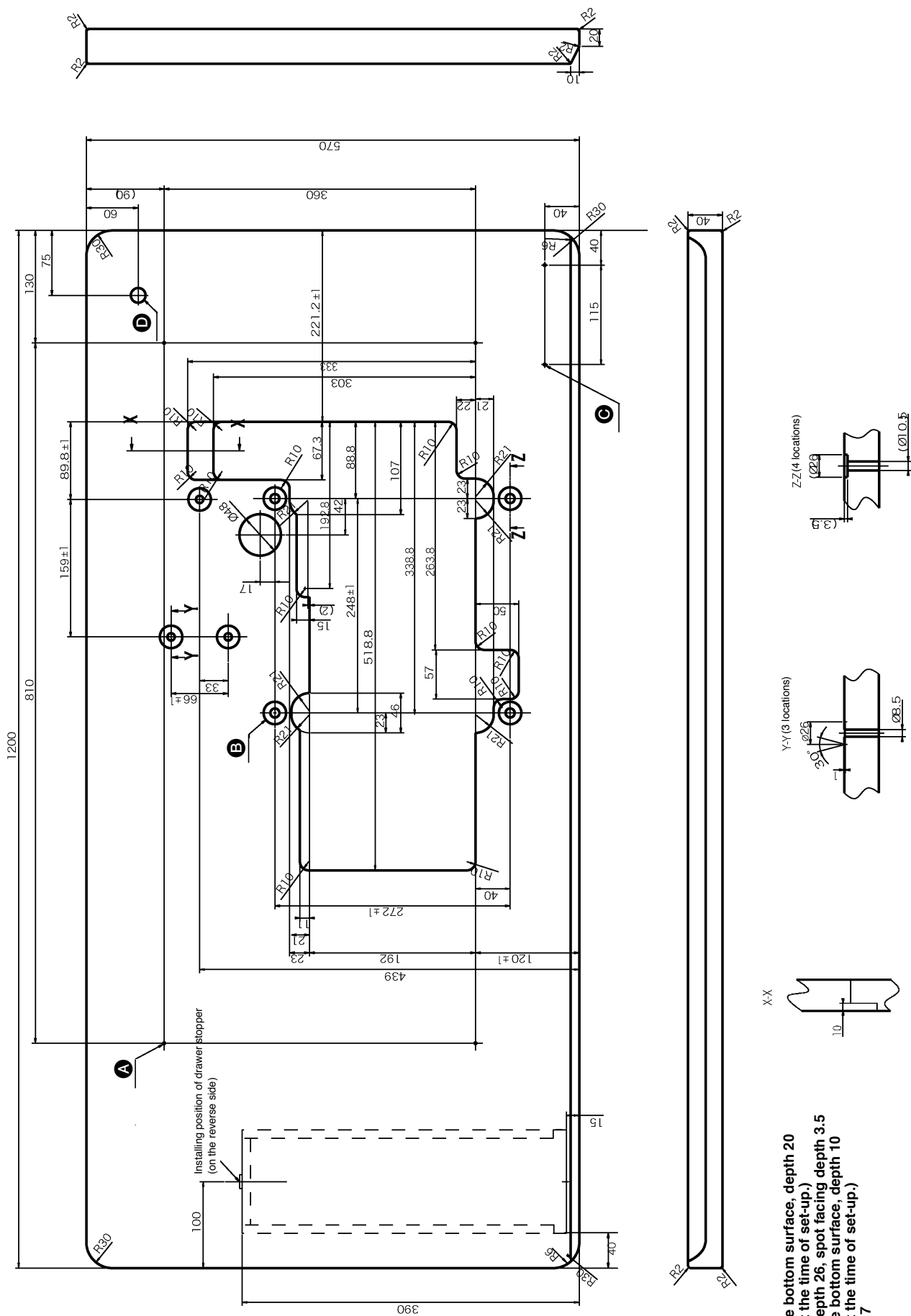
	Part No.	Part name	Q'ty
❶	40072505	Dust-proof rubber (Gray)	1
❷	13155403	Dust-proof rubber (Black)	3



[For the direct-drive type]

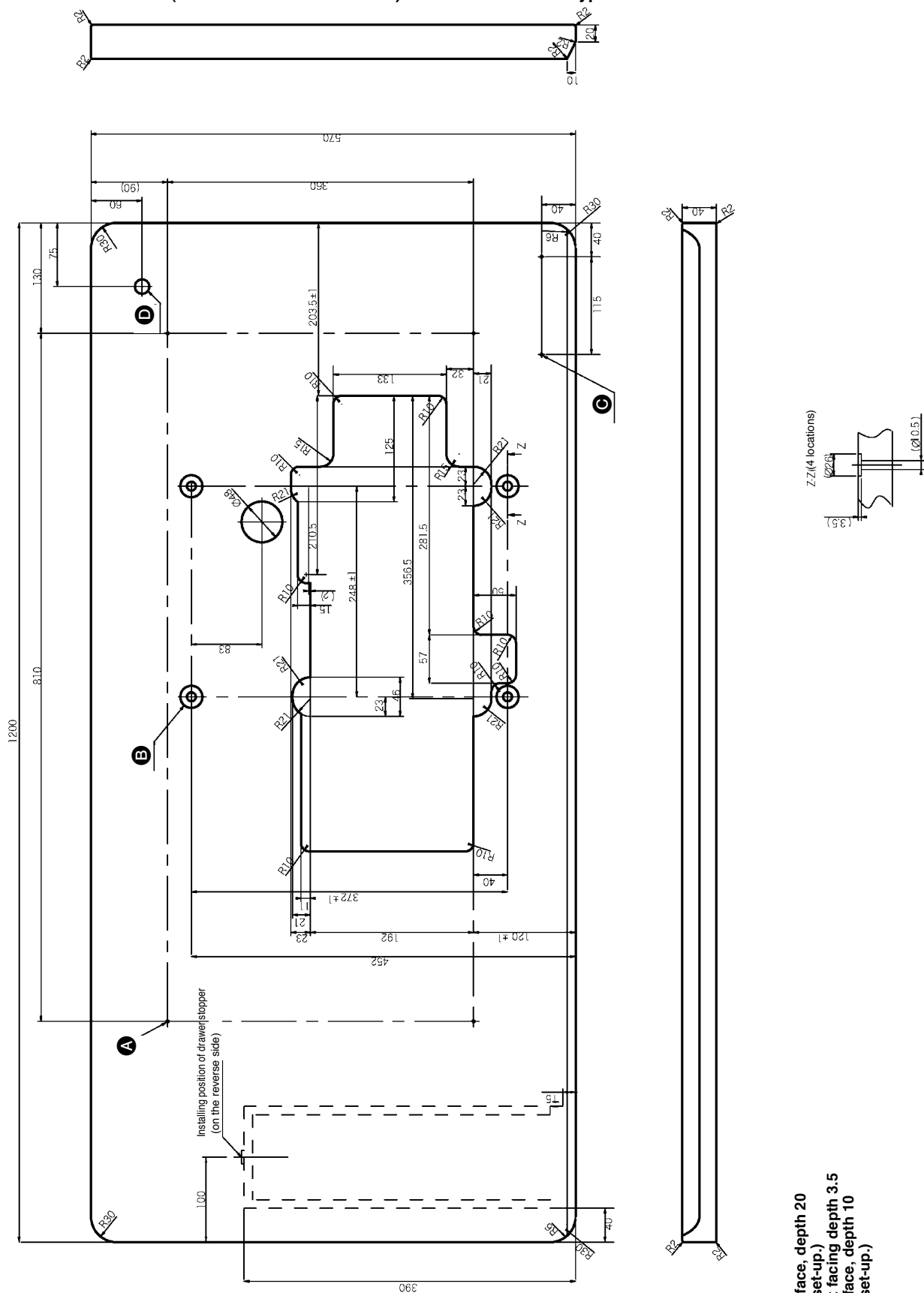
	Part No.	Part name	Q'ty
❶	40072505	Dust-proof rubber (Gray)	2
❷	13155403	Dust-proof rubber (Black)	2

DRAWING OF TABLE (SEMI-SUBMERGED TYPE) For the V-belt type



- A** 4-ø 3.4 on the bottom surface, depth 20
(Drill a hole at the time of set-up.)
- B** 4-10.5 hole, depth 26, spot facing depth 3.5
(Drill a hole at the time of set-up.)
- C** 2-ø 3.4 on the bottom surface, depth 10
(Drill a hole at the time of set-up.)
- D** Drilled hole 17

DRAWING OF TABLE (SEMI-SUBMERGED TYPE) For the direct-drive type



2. Selecting the motor pulley and the belt

Motor pulley and belt

Speed of stitch (sti/min)	50Hz		60Hz	
	Pulley size	Belt size	Pulley size	Belt size
4,500	ø 100	M-35	ø 85	M-35
4,800	ø 105	M-36	ø 90	M-35
5,000	ø 115	M-36	ø 95	M-35
5,500	ø 125	M-37	ø 105	M-36
5,800	ø 130	M-37	ø 110	M-36
6,000	ø 135	M-37	ø 115	M-37
6,200	ø 140	M-38	ø 120	M-38
6,500	ø 150	M-39	ø 125	M-38

* The table shows the numbers when a 3-phase 2-pole 400 W clutch motor (1 / 2 HP) is used.

* The commercially-available motor pulley near to the counted value is designated since the outside diameter of the commercially-available motor pulley counts by 5 mm.

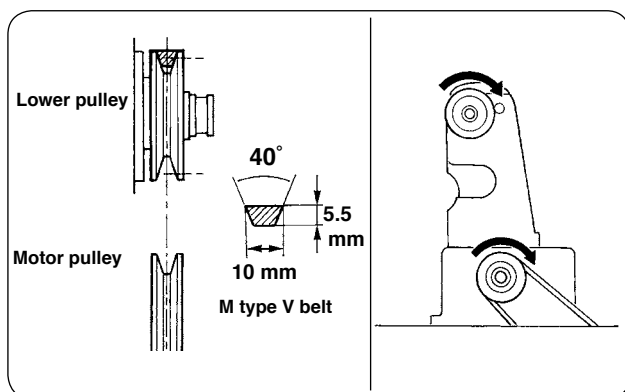


When you use a new sewing machine, use the machine at a speed of 4,500 sti/min or less for the first 200 hours (approximately one month). A good result can be obtained in terms of the durability.



Use a motor pulley which is adaptable to this sewing machine. The sewing speed exceeds the max. sewing speed of this sewing machine and machine trouble will be caused unless a motor pulley which is adaptable to this sewing machine is used.

3. Installing the motor



Use a clutch motor of 3-phase, 2-pole, 400 W (1/2HP). Use the M type V belt.

1) The motor pulley shifts to the left-hand side when depressing the pedal. At this time, install the motor so that the centers of motor pulley and lower pulley align with each other.

* For the installing procedure of the motor pulley, refer to the Instruction Manual for motor.

2) Install the motor so that the pulley rotates clockwise.



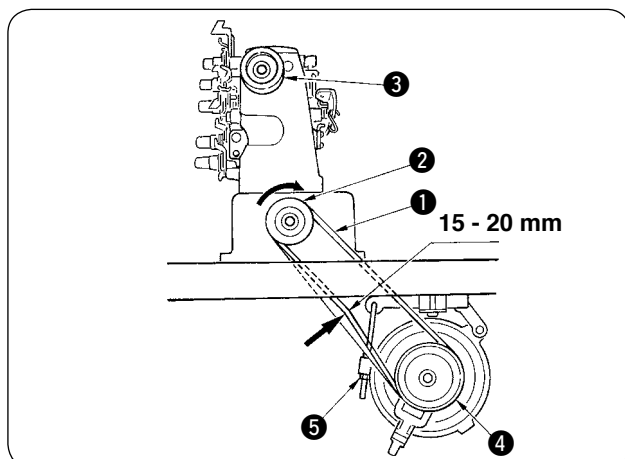
If the machine pulley rotates in the reverse direction, normal lubrication cannot be performed. As a result, machine trouble will be caused.

4. Setting the belt



WARNING :

When replacing the belt, be sure to turn OFF the power to the motor and ascertain that the motor has totally stopped rotating before starting the work. There is a danger of injury since hands or clothes may be caught in the belt.



1) Fit belt ❶ to lower pulley ❷.

2) Turning upper pulley ❸, set the other side of the belt to motor pulley ❹.

3) Adjust the belt tension so that the belt sags 15 to 20 mm when the center of the belt is pressed with an approximate 10N (1.02 kgf) load.

4) Securely fix the belt with lock nut ❺ when the belt has been set.



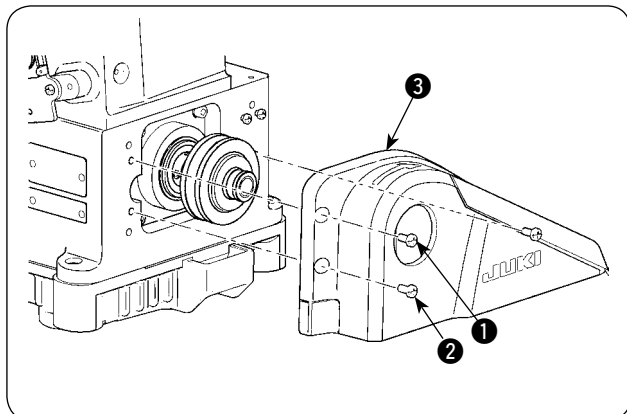
If the deflection of the belt is excessive when the sewing machine is operated, check again the belt tension.

5. Installing the belt cover



WARNING :

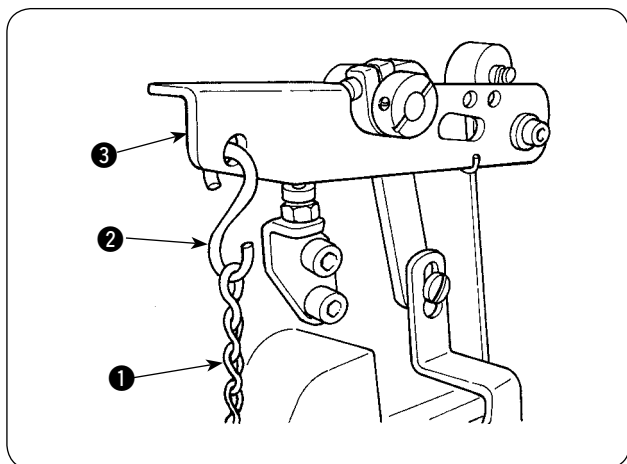
Be sure to install the belt cover. If it is not installed, there is a danger of injury since hands or clothes may be caught in the machine or a danger of damage of the machine since sewing products may be caught in the machine.



Install belt cover **3** as shown in the illustration.

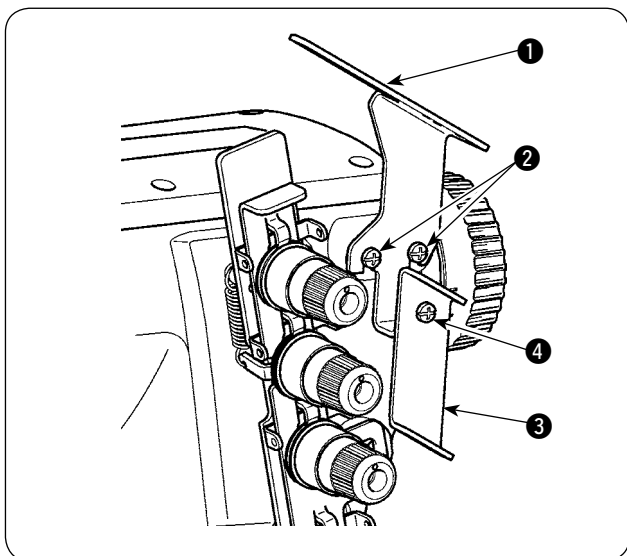
1 and **2** are the fixing screws for belt cover **3**.

6. Installing the chain



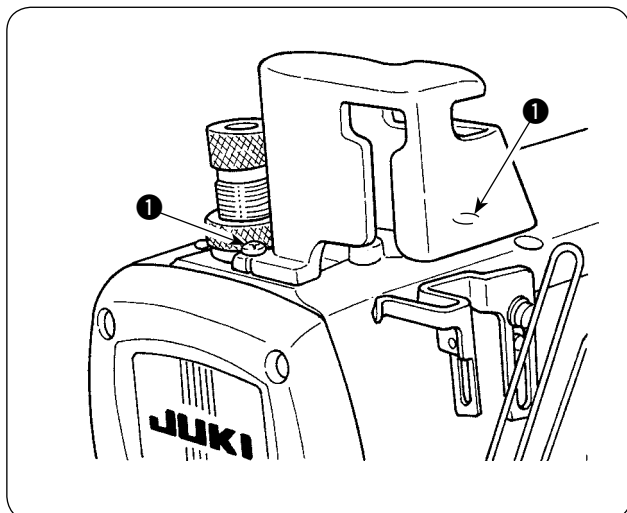
- 1) Hang hook **2** of chain **1** to presser bar lifting lever **3**.
- 2) Hook the other side of the chain **1** to the pedal.

7. Installing the thread guide



- 1) Install thread guide No. 1 **1** supplied as accessories on the machine arm with screws **2**.
- 2) Install thread guide **3** on thread guide No. 1 **1** with screw **4**.

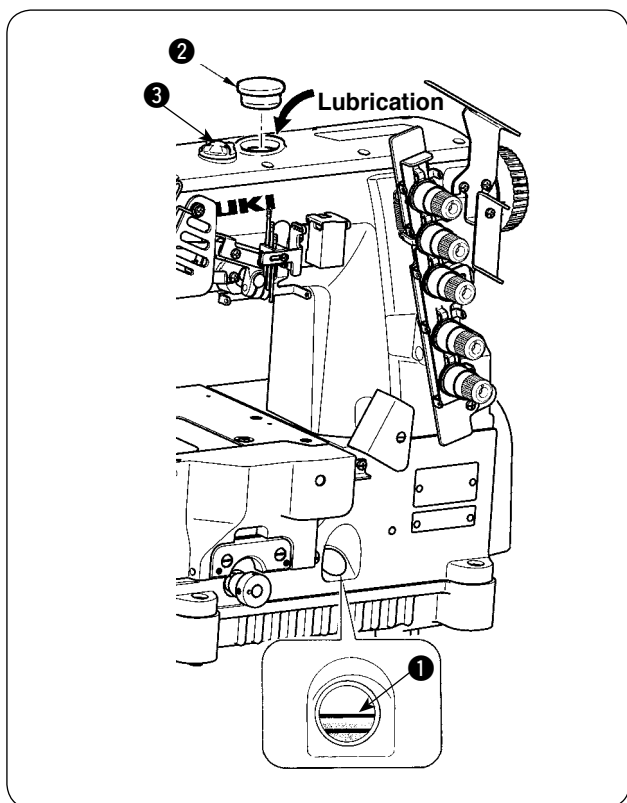
8. Installing the needle bar thread take-up cover



Install the needle bar thread take-up cover supplied with the unit on the machine arm with two screws ①.

IV. LUBRICATION AND OILING

1. Lubricating oil



<When using the sewing machine for the first time>

Lubricating oil has been taken out at the time of delivery. Be sure to supply lubricating oil before using the sewing machine for the first time.

• Oil used : JUKI GENUINE OIL 18



Do not use oil addition agent since deterioration of lubricating oil or machine trouble will be caused.

To add oil, remove first the oil inlet cap ② indicated as "OIL". Then, add oil from the oil inlet until the oil surface reaches the middle of the upper and lower marker lines on oil gauge ①.

<Checking before using the sewing machine>

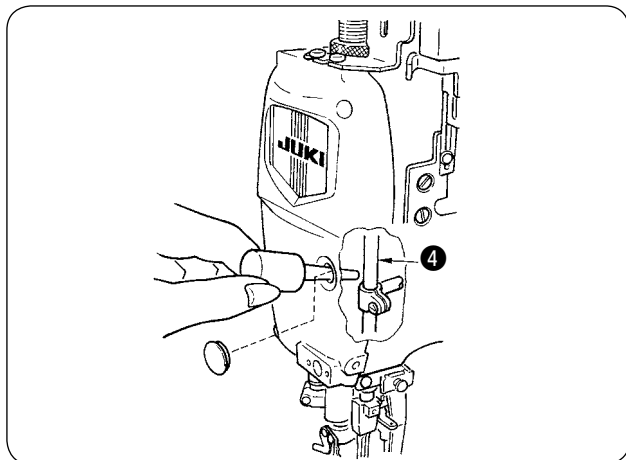
- 1) Check oil gauge ① and make sure that lubricating oil level is between the upper and lower two lines. When lubricating oil level lowers below the lower line, supply lubricating oil.
- 2) Make sure that lubricating oil comes out from the nozzle of oil circulation identification window ③ when rotating the sewing machine. When lubricating oil does not come out, perform "VII-3. Inspecting and replacing the oil filter". (See page 27.)

2. Oiling



WARNING :

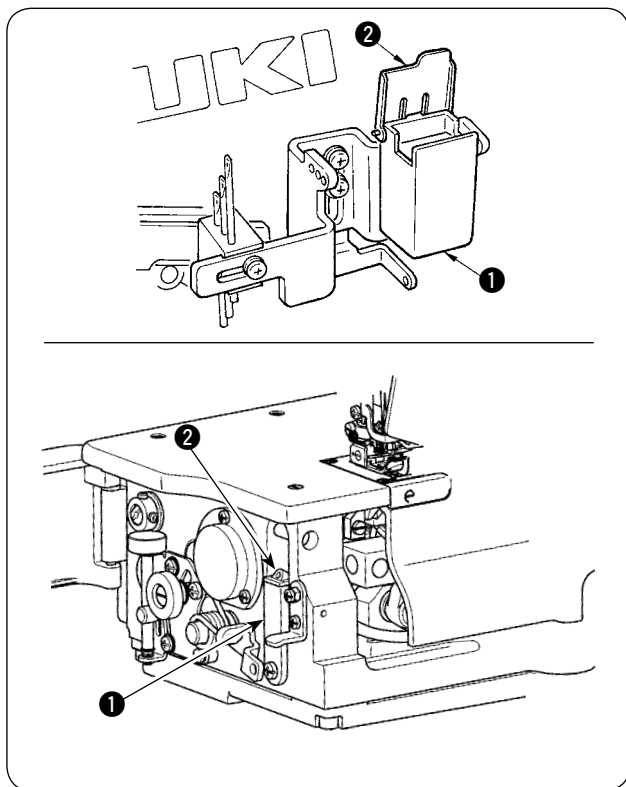
To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.



When you operate the sewing machine for the first time or after an extended period of disuse, be sure to apply 2 to 3 drops of lubricating oil to needle bar ④.

For the lubricating oil, use JUKI GENUINE OIL 18.

3. Silicon oil lubricating unit



This sewing machine is provided with the silicon oil lubricating unit as standard. In case of sewing at a high speed, or using chemical thread or chemical fabric, use the silicon oil lubricating unit to prevent thread breakage or stitch skipping. Oil used is silicon oil (dimethyl silicon).

Open cover ② of silicon container ① and make sure that silicon oil enters needle thread, needle tip and silicon oil lubricating unit. If silicon oil is insufficient there, supply it (dimethyl silicon).



When silicon oil adhered to the components other than the silicon oil lubricating unit, be sure to wipe it out. If the components to which silicon oil adhered are kept without wiping out the oil, sewing machine trouble will be caused.

V. OPERATION

1. Needle

Japan No.	9	10	11	12	14
German No.	65	70	75	80	90

The needle used for this sewing machine is UY128GAS.

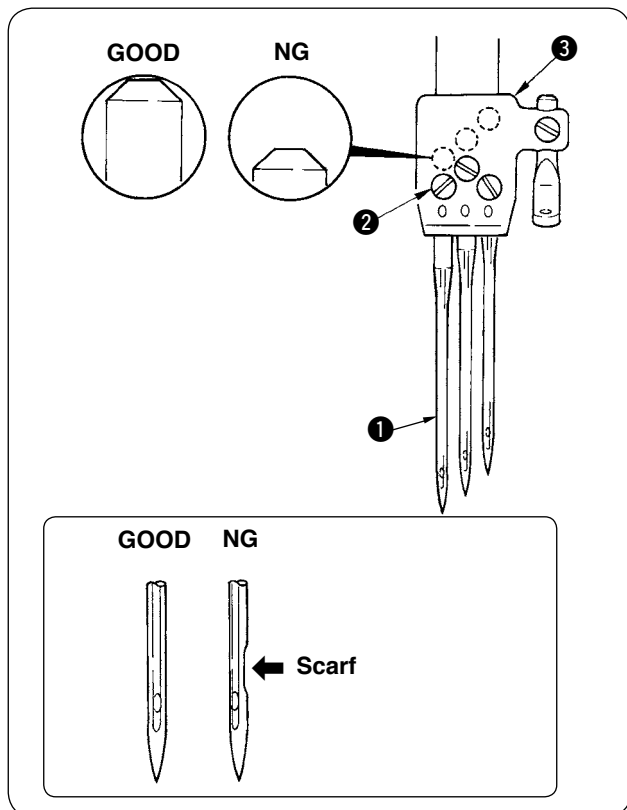
For the needle No., select a proper needle in accordance with the sewing conditions.

2. Attaching the needle



WARNING :

To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.



- 1) Loosen setscrew ② of needle ① with a screwdriver.
- 2) Hold the new needle with indented part facing to the rear and insert it into the hole in needle clamp ③ until the end of hole is reached.
- 3) Securely tighten setscrew ② of the needle.

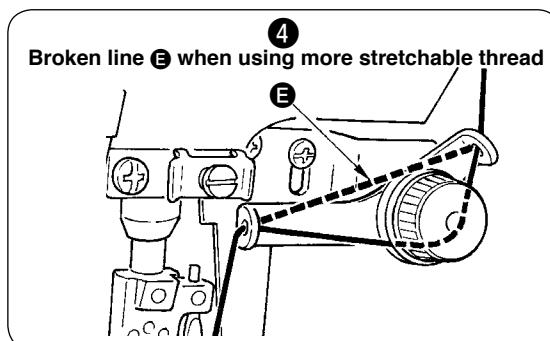
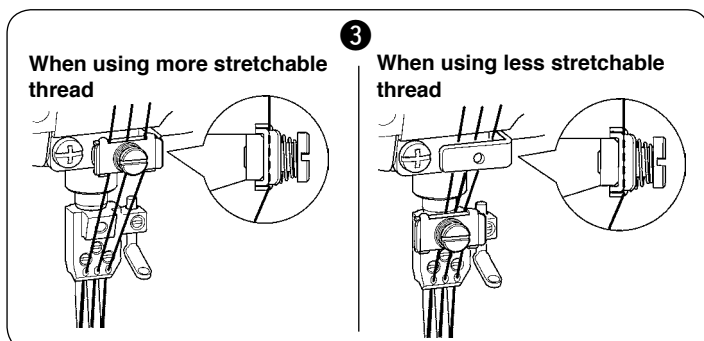
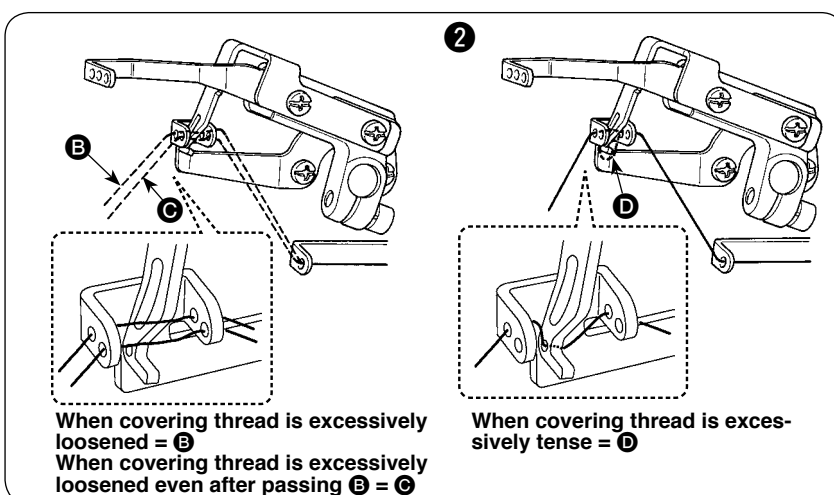
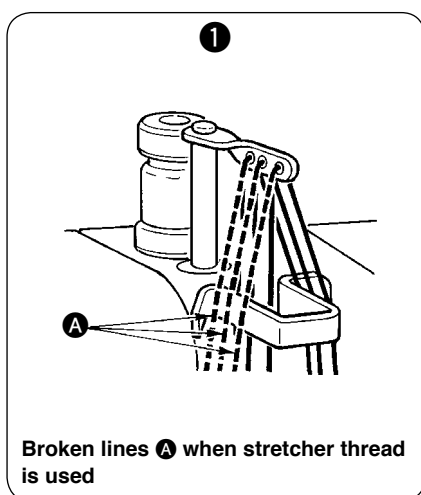
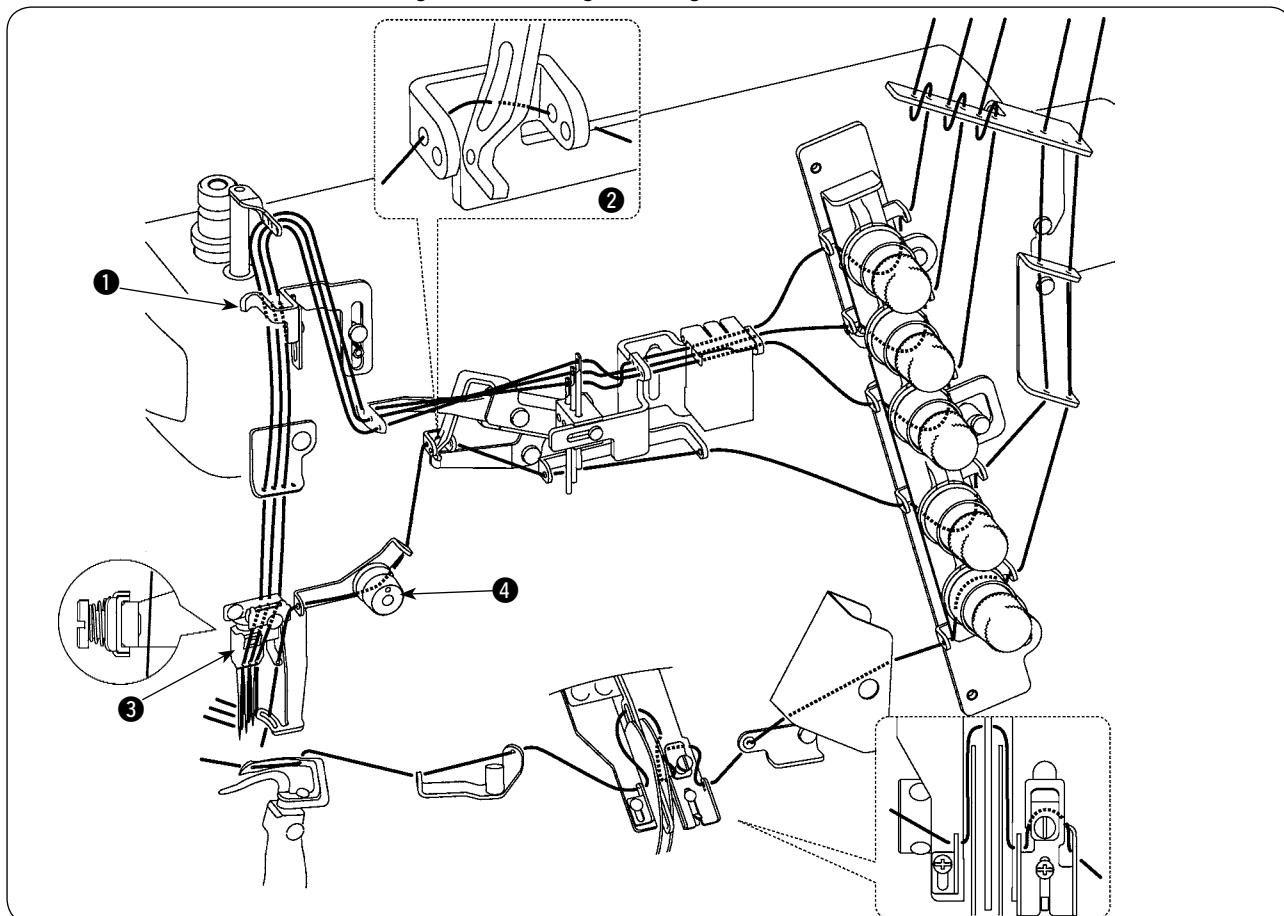
3. Threading the machine head



WARNING :

To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest. If threading is wrong, stitch skipping, thread breakage, needle breakage or irregular stitches will be caused. So, be careful.

Thread the machine head according to the following threading illustrations.

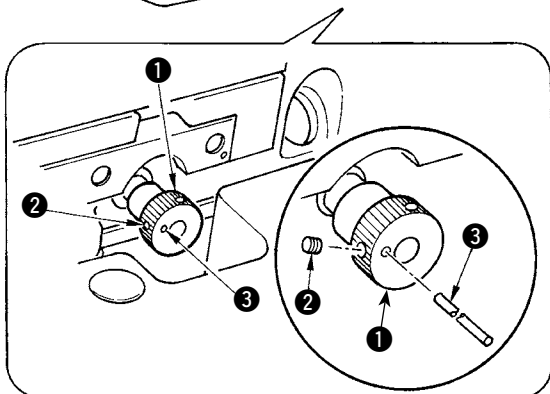
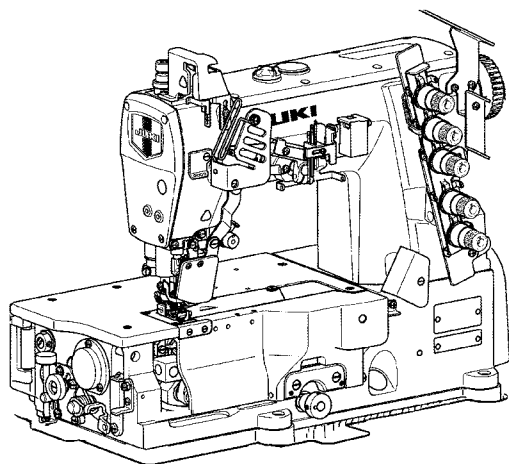


4. Adjusting the stitch length



WARNING :

To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.



The stitch length can be infinitely adjusted from 1.2 mm to 3.6 mm.

- * The actually sewn stitch length varies in accordance with kind and thickness of the materials.

[How to change the stitch length]

Turn clockwise feed regulating knob ① to increase the stitch length.

Turn it counterclockwise to decrease the stitch length.

• When making the stitch length 3.6 mm or more

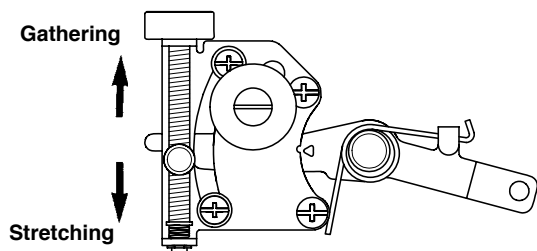
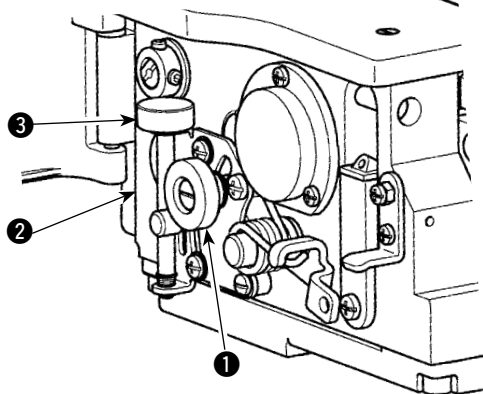
Loosen screw ② and turn clockwise feed regulating knob

① to regulate the stitch length.

Push pin ③ until it goes to the end, and fix it with screw ②.

Use the machine within the range where feed dogs or feed dog and throat plate do not come in contact with each other.

5. Adjusting the differential feed ratio



Loosen differential lock nut ① and move lever ② up to increase the differential feed ratio. Then the sewn material is gathered.

Move lever ② down to decrease the differential feed ratio.

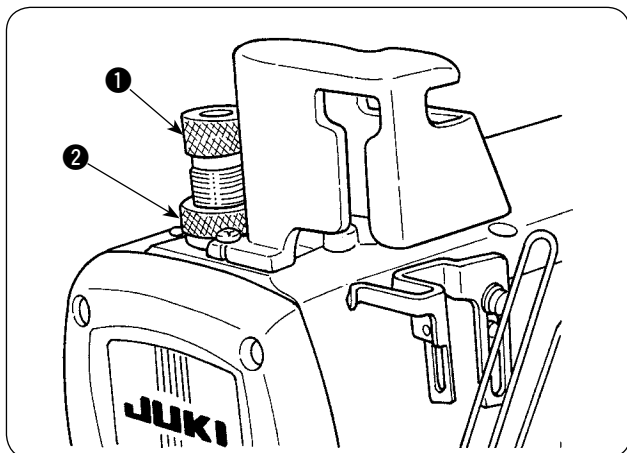
The differential feed ratio becomes 1 : 1 at the position where the pointer of lever ② is on the long scale. Note that two scales on the upper side show 1 : 1.4 and 1 : 2 respectively, and one on the lower side 1 : 0.7.

Fine adjustment of the differential feed ratio can be performed with micro-adjustment knob ③.



There is a case where feed dogs or feed dog and throat plate come in contact with each other by the aforementioned adjustment according to the relation between the stitch length and the differential feed ratio. So, be very careful.

6. Adjusting the presser foot pressure



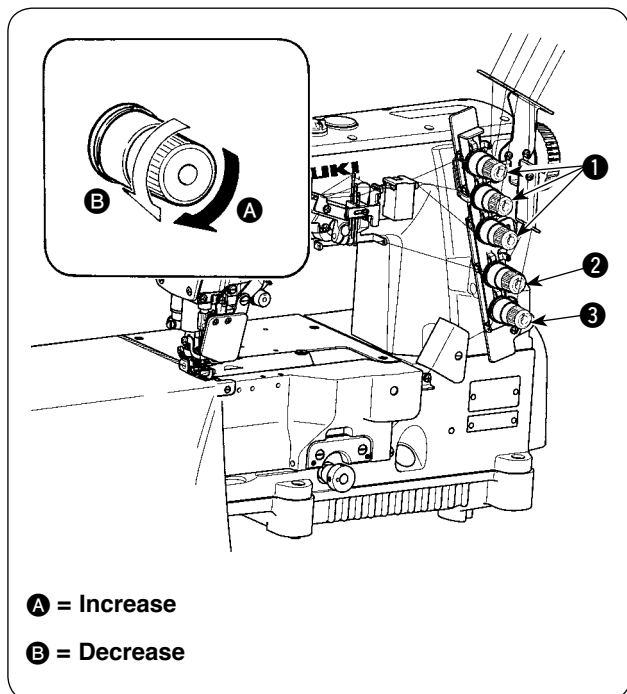
Decrease the presser foot pressure as low as possible to such an extent that stitches are stabilized.

To adjust the pressure, loosen lock nut **2** of presser spring regulator **1** and turn presser spring regulator **1**. After the adjustment, tighten lock nut **2**.

Turning it clockwise to increase the pressure.

Turning it counterclockwise to decrease the pressure.

7. Adjusting the thread tension



A = Increase

B = Decrease

Adjust the thread tension with the following thread tension nuts.

1 Needle thread tension nut

2 Top covering thread tension nut

3 Looper thread tension nut

Turn clockwise to increase the thread tension.

Turn counterclockwise to decrease the thread tension.

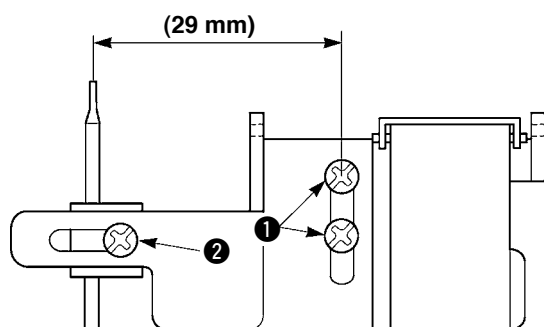
VI. ADJUSTING THE SEWING MACHINE

1. Adjusting the silicon container thread guide

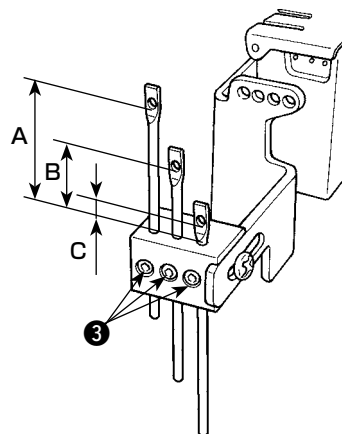


WARNING :

To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.



- 1) Loosen setscrews ❶ and shift them to the lower-most position. Then, tighten setscrews ❶.
- 2) Loosen setscrew ❷. Move the needle thread guide bar to adjust so that a distance of 29 mm is provided between its center and the center of screws ❶. Then, fix the needle thread bar at that position with setscrew ❷.



- 3) Loosen setscrews ❸ and adjust so that the heights of the respective needle thread guide rods are the dimensions as shown in the illustration. Then tighten screws ❸ to fix the thread guide rods.

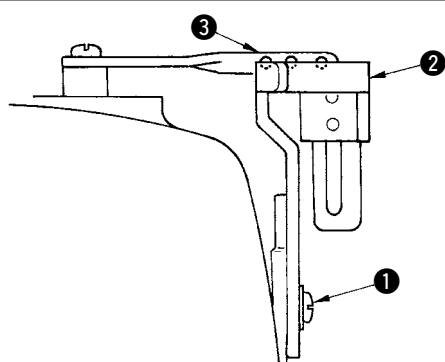
A	B	C
29mm	17mm	5mm

2. Adjusting the needle bar thread take-up thread receiver



WARNING :

To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.



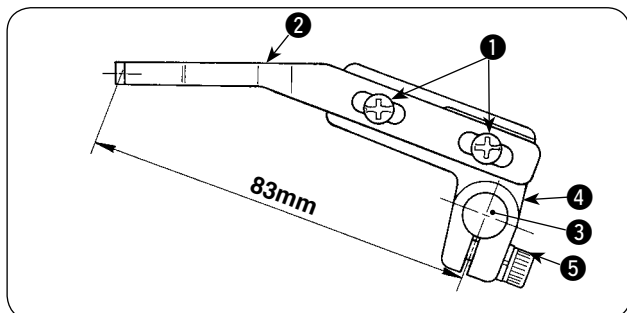
Loosen setscrew ❶ and adjust so that the bottom end to the center of the thread hole of needle bar thread take-up ❸ aligns with the top end of needle bar thread take-up thread receiver ❷ when the needle bar is in its lowest position. Then tighten screw ❶ to fix the needle bar thread take-up thread receiver.

3. Adjusting the rocking thread take-up



WARNING :

To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.



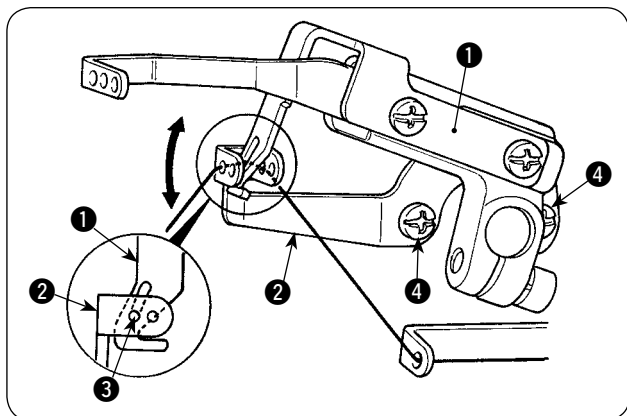
- 1) Loosen setscrews ①. Move rocking thread take-up lever ② to the right and left to adjust so that a distance of 83 mm is provided between the thread hole and the center of rocking thread take-up lever shaft ③. Then, tighten setscrews ①.
- 2) Adjust so that rocking thread take-up base ④ is level when the rocking thread take-up is in its lowest position. Retighten screw ⑤ to fix the rocking thread take-up base.

4. Adjusting the spreader thread guide



WARNING :

To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.



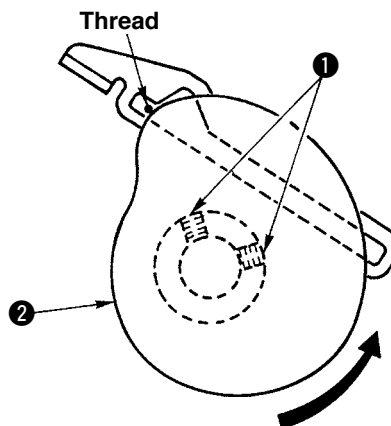
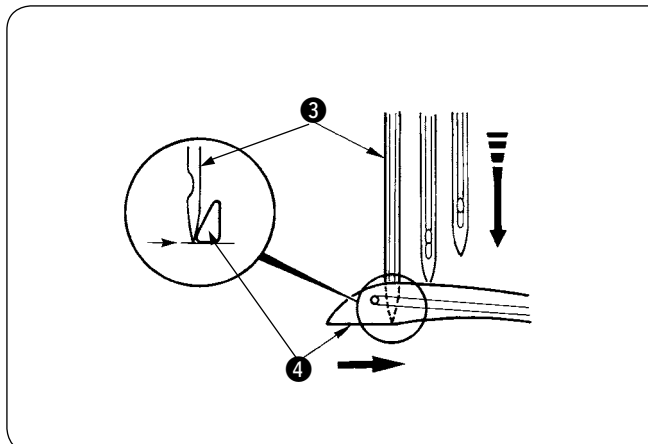
Adjust so that the top end of thread guide thread path (rear) ③ of spreader thread guide ② aligns with the bottom surface of slot of spreader thread take-up ① when spreader thread take-up ① is in its highest position. Then tighten screw ④ to fix the spreader thread guide.

5. Adjusting the looper thread cam



WARNING :

To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.



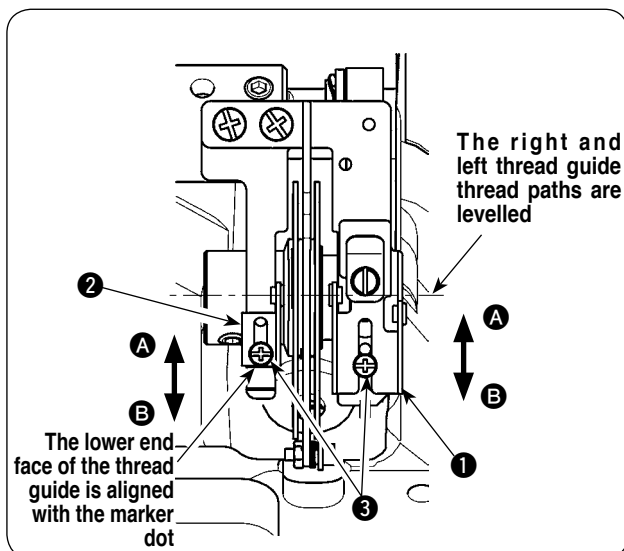
Adjust so that thread comes off from the highest place of looper thread cam ② when needles come down and the top end of left needle ③ aligns with the bottom surface of looper ④. Then tighten screws ① to fix the looper thread cam.

6. Adjusting the loop thread cam eyelet



WARNING :

To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.



When the thread drawing amount is desired to be decreased in case of 2-needle machine or the like, loosen screws ③, move upward thread guides ① and ② and tighten screws ③ to fix them.

Ⓐ = Decrease

Ⓑ = Increase

Standard adjustment is achieved in the following state:

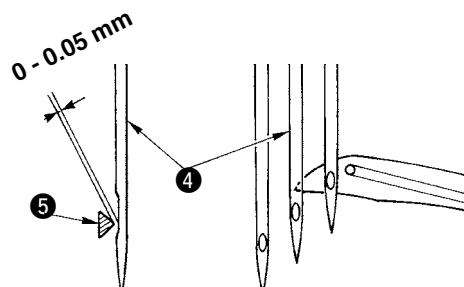
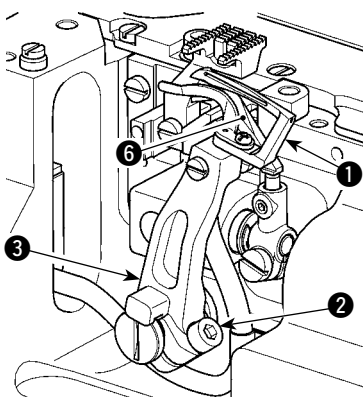
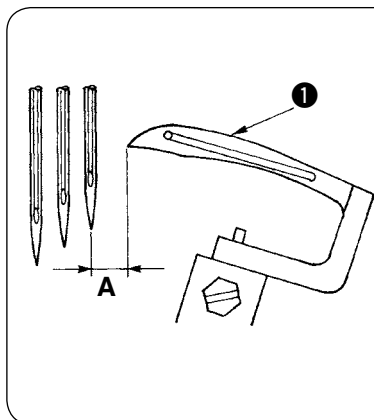
- ① The lower end face of the thread guide is aligned with the marker dot
- ② The right and left thread guide thread paths are levelled

7. Adjusting the looper



WARNING :

To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.



[Lateral position]

The relation between clearance **A** between looper ① and the center of right-hand needle and the needle gauge is as shown in the table.

Unit : mm

2-needle		3-needle	
Needle gauge	Return amount A	Needle gauge	Return amount A
3.2	4.9		
4.0	4.5		
4.8	4.1	4.8	4.1
5.6	3.7	5.6	3.7
6.4	3.3	6.4	3.3

Loosen clamp screw ② and laterally adjust looper holder ③ in accordance with the table.

[Longitudinal position]

Adjust so that the clearance between blade point ⑤ of the looper and medium needle ④ is 0 to 0.05 mm when the top end of the looper comes from the extreme right position to the center of the medium needle. After the adjustment, tighten clamp screw ② to fix the looper.

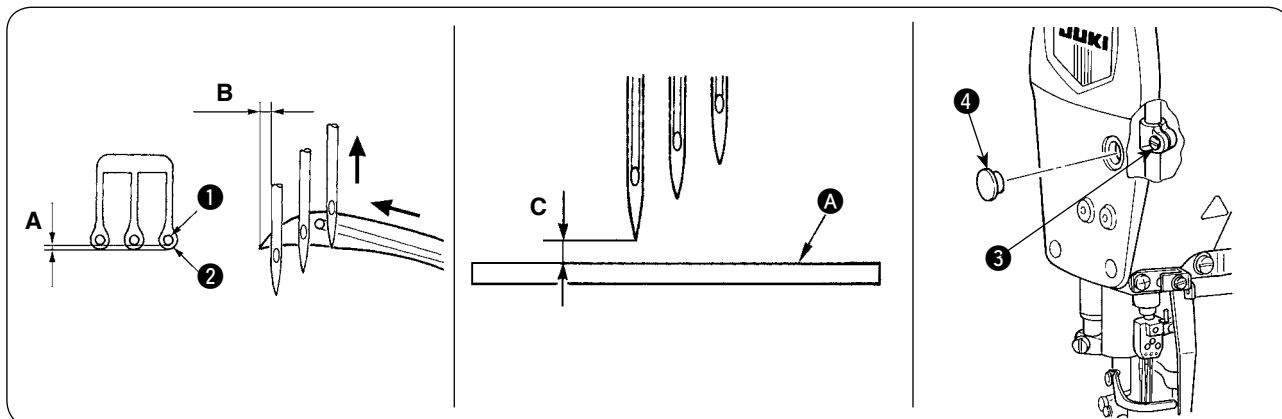
* The blade point of the looper comes in contact with the right-hand needle when rear needle guard ⑥ does not work. So, be careful.

8. Adjusting the height of the needle



WARNING :

To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.



- 1) Equally adjust clearance **A** between needles **1** and needle holes **2** in the throat plate.
- 2) Adjust the height of the needle bar so that the top end of the needle hole of left-hand needle aligns with the bottom end section of the looper when the looper travels to the extreme right end and top end **B** of the looper protrudes by approximately 1 mm from the left end of the left-hand needle, remove the rubber cap **4** in the face plate, and tighten needle bar bracket setscrew **3** to fix the needle bar.

Reference : Height from the top surface of the throat plate **A** to the top end of left-hand needle, **C** when the needle is in the higher dead point is as shown in the table.

Unit : mm

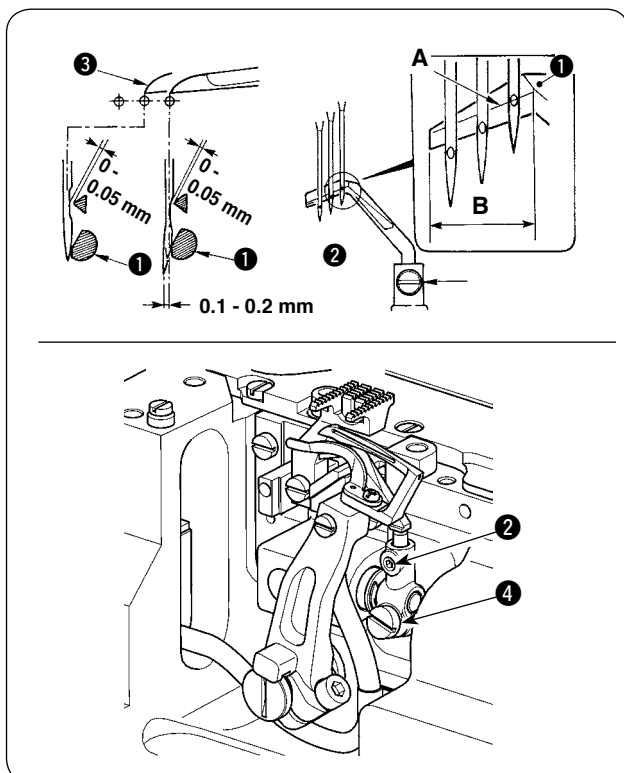
2-needle		3-needle	
Needle gauge	Height of left-hand needle, C	Needle gauge	Height of left-hand needle, C
3.2	9.7		
4.0	9.3		
4.8	8.8	4.8	8.8
5.6	8.5	5.6	8.5
6.4	8.0	6.4	8.0

9. Adjusting the rear needle guard



WARNING :

To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.



Adjust the lateral position of rear needle guard **1** so that it receives the needle within the range of **B** when the needle is in its lowest position.

- 1) Adjust the height with setscrew **2** so that edge line **A** of rear needle guard **1** enters in the needle hole of right-hand needle when the needle bar is in its lowest position.
- 2) Make rear needle guard **1** slightly come in contact with the right-hand needle so that the clearance between right-hand needle and top end **3** of the looper is 0 to 0.05 mm when top end **3** of the looper comes from the extreme right end to the center of right-hand needle. In addition, make rear needle guard **1** slightly come in contact with the medium needle so that the clearance between the medium needle and top end **3** of the looper keeps 0 to 0.05 mm when top end **3** of the looper comes to the center of medium needle. Perform the adjustment with setscrews **2** and **4**.

10. Relation between the rocking thread take-up timing and the needle thread loop

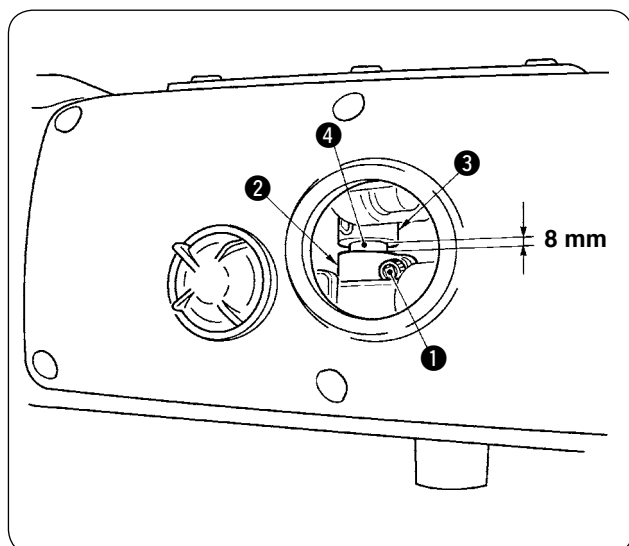


WARNING :

To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.

In the case stitch skipping or thread breakage occurs because the needle thread loop is too large or too small, change the needle thread feeding timing of the rocking thread take-up to adjust the size of the needle thread loop.

(1) Adjustment by means of the crank



- 1) Loosen screw ❶.
 - 2) Move ❷ forward or backward. The relation between the moving direction and the size of needle thread loop is as shown in the table below.
 - 3) After the adjustment, securely tighten screw ❶.
- * Clearance between crank ❷ and thrust collar ❸ has been factory-adjusted to 8 mm at the time of delivery. (Engraved marker line on rocking thread take-up shaft ❹ aligns with the edge of crank ❷.)

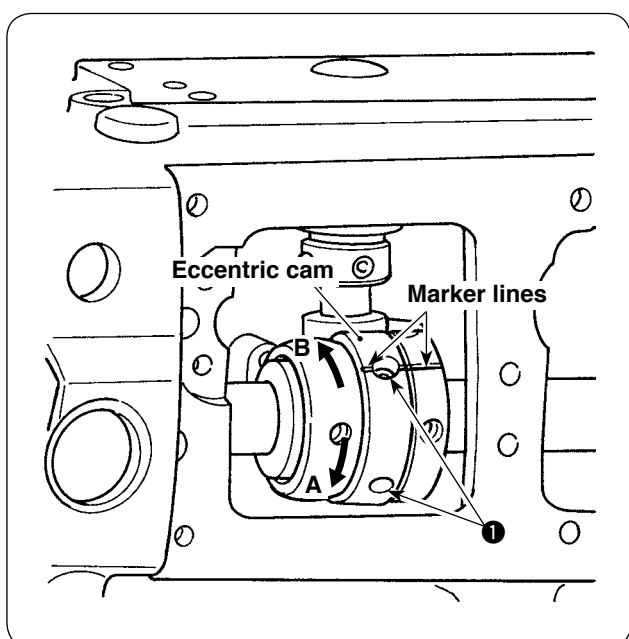
● Size of needle thread loop

Move forward	Move backward
Loop becomes smaller.	Loop becomes larger.



1. When screw ❶ is loosened, the rocking thread take-up rotates due to the light weight. So, be careful. If it rotates, refer to the item **"VI-3. Adjusting the rocking thread take-up"** (See page 16.).
2. Do not change the timing other than the aforementioned one since the sewing trouble will be caused.

(2) Adjustment by the eccentric cam



- 1) Remove the top cover.
 - 2) Loosen screw ❶.
 - 3) Turn the eccentric cam. The direction of turning the eccentric cam and the relation between the eccentric cam and the needle thread loop is shown in the following table.
 - 4) After the adjustment, fully tighten screw ❶.
- * With the factory-adjusted value at the time of shipment, the marker lines are aligned.

● Size of needle thread loop

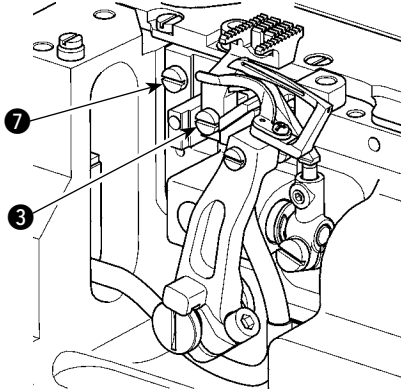
A Move forward	B Move backward
Loop becomes smaller	Loop becomes larger

11. Adjusting the height of the feed dog

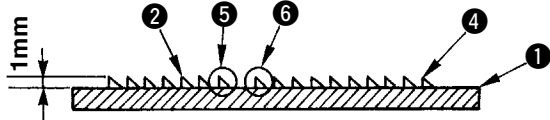


WARNING :

To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.



Adjust the height from the top surface of throat plate ① to the rear end of main feed dog ② to 1 mm when the feed dog comes to its highest position and tighten setscrew ③ to fix the feed dog. For the height of differential feed dog ④, adjust the height of front end ⑤ of main feed dog ② to that of rear end ⑥ of differential feed dog ④, and tighten setscrew ⑦ to fix the differential feed dog. It is the standard that throat plate ① is flush with the feed dog when the feed dog is in its highest position.

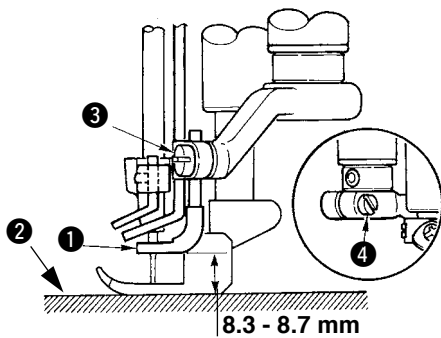


12. Installing position of the spreader



WARNING :

To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.



[Adjusting the height]

The height of spreader ① is 8.3 to 8.7 mm from the top surface of throat plate ② to the bottom surface of spreader.

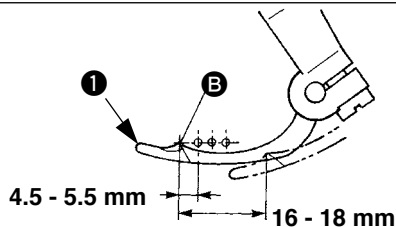
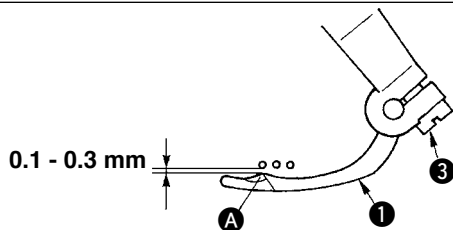
Adjust the height with clamp screw ③ and fix the spreader ①.

[Adjusting the longitudinal position]

Adjust so that the clearance between the spreader ① and left-hand needle is 0.1 to 0.3 mm when spreader ① travels from the extreme left position to the right and section A comes to the front of left-hand needle. Then fix the spreader ① with clamp screw ③.

[Adjusting the lateral position]

Adjust so that the distance from the center of left-hand needle to section B of the spreader ① is 4.5 to 5.5 mm when the spreader ① is in the extreme left position. Then fix the spreader ① with clamp screw ④.

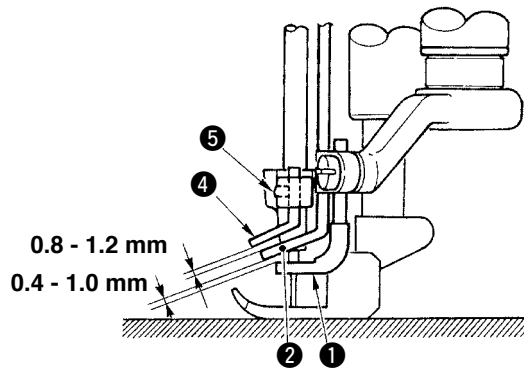
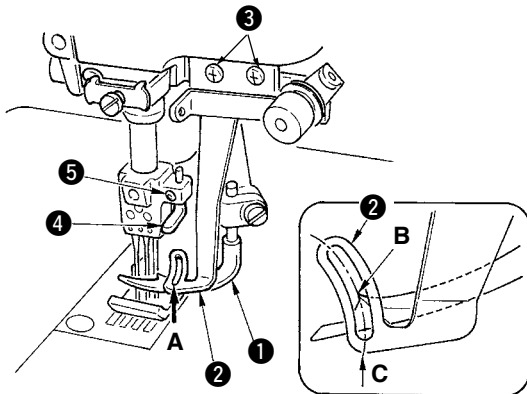


13. Adjusting the spreader thread guide and the needle clamp thread guide



WARNING :

To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.



[Spreader thread guide]

Adjust so that the clearance between spreader thread guide ② and spreader ① is 0.4 to 1.0 mm. Then fix the spreader thread guide with setscrews ③.

- * Adjust so that the center of slot A of thread guide ② aligns with blade point B of spreader when spreader ① is in the extreme right position. In addition, allow the spreader thread guide to come near the needle clamp to such an extent that the spreader thread guide does not interfere with the needle clamp.

[Needle clamp thread guide]

Adjust so that the center of thread hole of needle clamp thread guide ④ aligns with center C of slot A when the needle is in the lowest position.

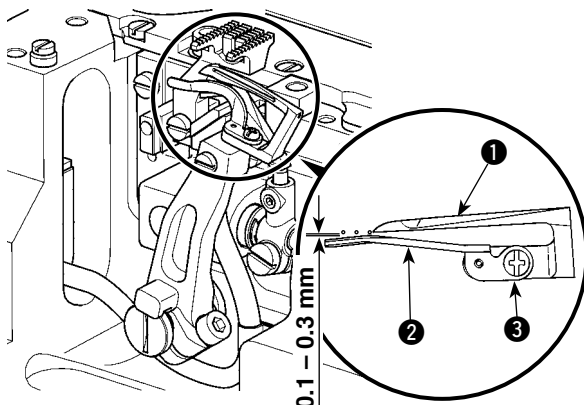
- * At this time, adjust so that the clearance between needle clamp thread guide ④ and spreader thread guide ② is 0.8 to 1.2 mm. Then fix the needle clamp thread guide with setscrew ⑤.

14. Adjusting the front needle guard



WARNING :

To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.



Adjust so that the clearance between the needles and front needle guard ② is 0.1 to 0.3 mm when looper ① travels from the extreme right position to the left and passes the rear side of the respective needles. Then fix the front needle guard with setscrew ③.

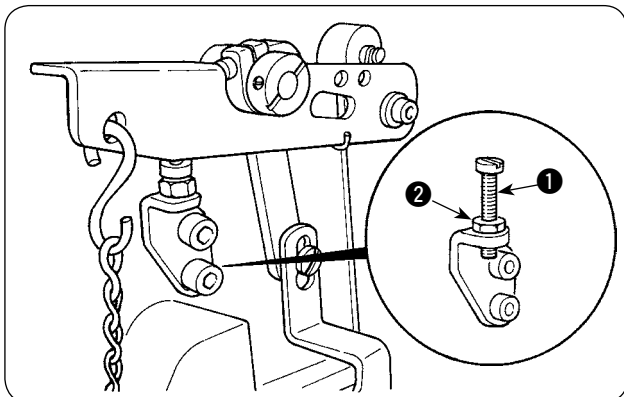
- * Allow front needle guard ② to come to the needle as near as possible within the range where needle thread smoothly passes in accordance with the kind or thickness of thread.

15. Adjusting the presser foot lift



WARNING :

To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.



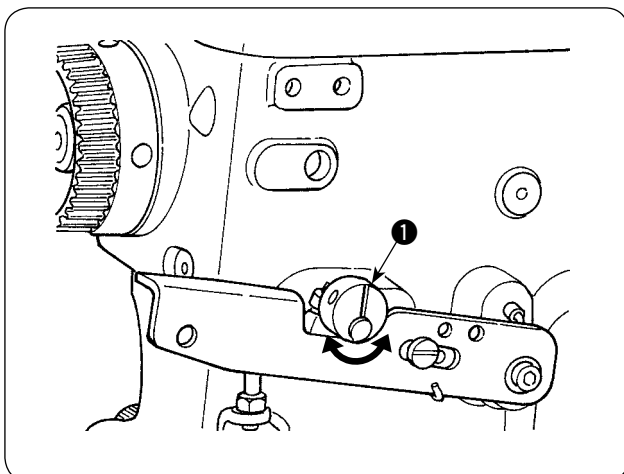
To adjust the height of the presser foot, adjust the height of screw ① so that the presser foot does not come in contact with other components and fix the presser foot with nut ②.

16. Adjusting the micro-lifter



WARNING :

To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.



When the micro-lifter collar ① is turned clockwise and counterclockwise, the presser bar lifting lever is pressed down to lift the presser foot.

Adjust the height of the micro-lifter according to the sewing condition.



In the case the micro-lifter is not used, use the sewing machine with the marker line on the micro-lifter collar faced straight up.

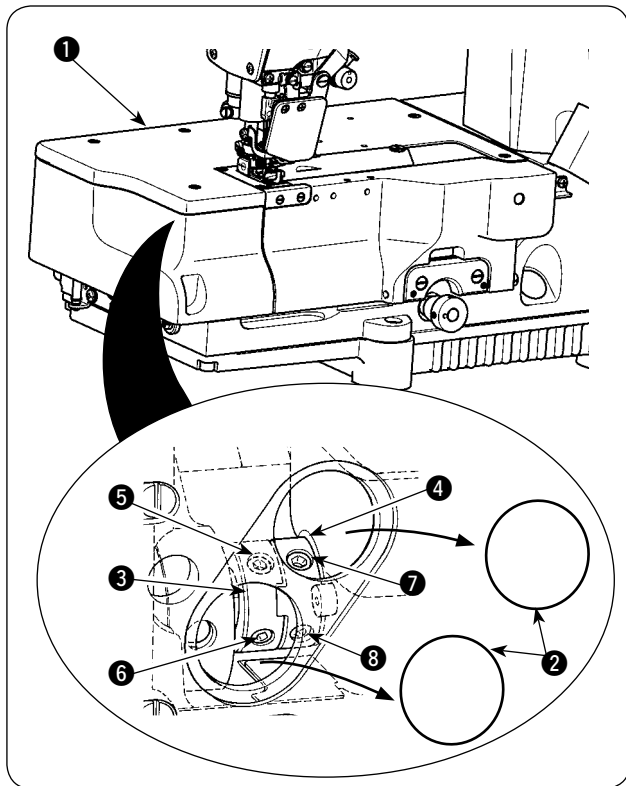
17. Adjusting the feed locus



WARNING :

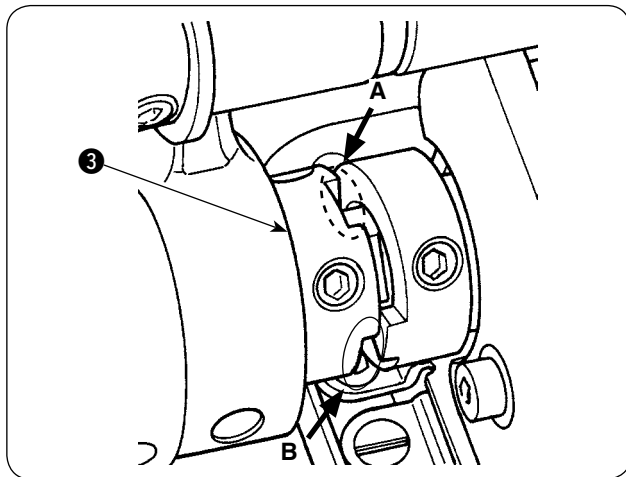
To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.

(1) Changing the feed driving movement

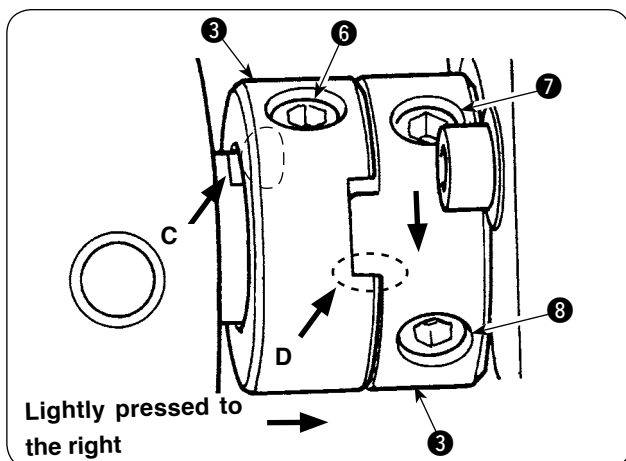


Timing of the feed driving eccentric cam can be retarded from the standard adjustment by 10°.

- 1) Remove cloth plate, left ① and rubber plugs ②.
- 2) Insert a hexagonal wrench key into the hole from which the rubber plug is removed to loosen two setscrews ⑤ and ⑥ of positioning cam ③ and setscrews ⑦ and ⑧ of feed driving eccentric cam ④.



- 3) Move positioning cam ③ to the left. Disengage the convex section from the 1st concave section. Then, engage the convex section A with the 2nd concave section B.

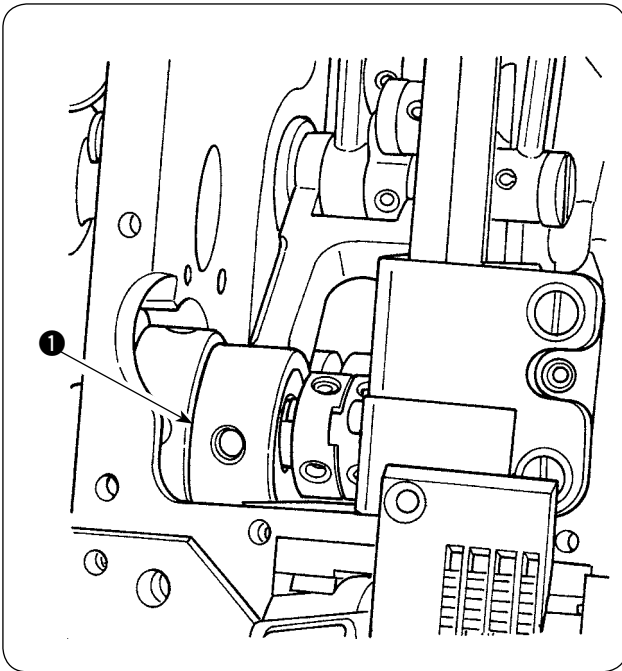


- 4) Fix positioning cam ③ on flat section C with positioning cam setscrew No. 2 ⑥, while lightly pressing the cam to the right.
- 5) Check to be sure that feed driving eccentric cam ④ is movable. Then, tighten setscrew No. 1 ⑤.
- 6) Fix feed driving eccentric cam ④ with eccentric cam setscrews No. 1 ⑦ and No. 2 ⑧, while pressing the cam in the opposite direction to its normal movement.

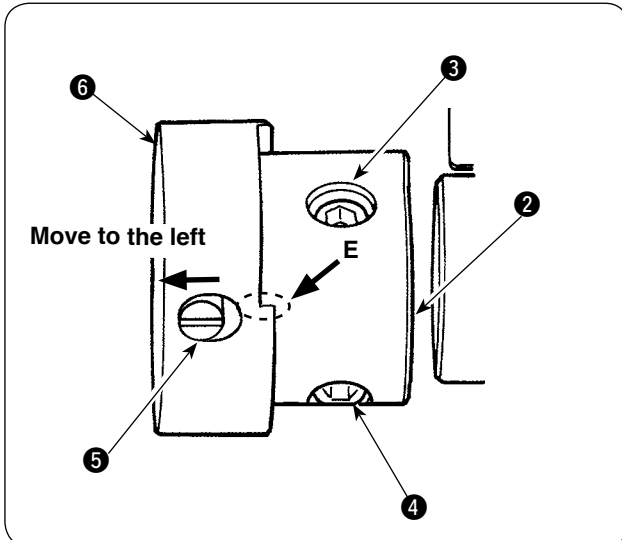


Check to be sure that the "positioning cam ③ is in contact with the feed driving eccentric cam" ④ (section D) so as to prevent the setscrews from loosening.

(2) Changing the feed rock movement



Timing of the feed rock eccentric cam ❶ can be retarded from the standard adjustment by 10°.



- 1) Align screws ❷ and ❸ of feed rock eccentric cam ❶ with the holes in the rod.
- 2) Loosen two screws ❷ and ❸.
- 3) Move feed rock eccentric cam ❶ to shift pin ❹ to the left.
- 4) Fix feed rock eccentric cam ❶ with two screws ❷ and ❸, while pressing the cam against positioning cam ❺.



Check to be sure that the "pin ❹ is in contact with the feed rock eccentric cam" ❶ (section E) so as to prevent the screws from loosening.

(3) Restoring to the standard adjustment

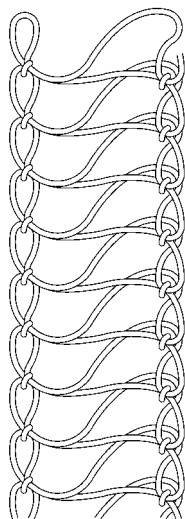
To restore the cam timing to the standard adjustment, return the changed positioning of (1) feed driving movement and (2) feed rock movement back to the home position.

18. Adjustment value of balloon



WARNING :

To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.



When performing balloon stitch, carry out the adjustment referring to the adjustment values described below.

[2-needle balloon stitch without top covering]

① Feed timing

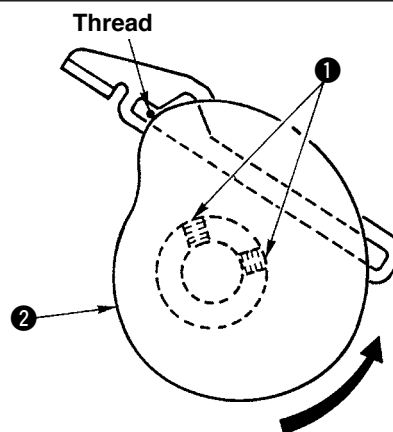
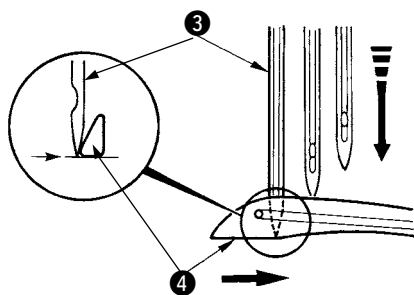
Feed driving eccentric cam: Upper dead point of the eccentric cam 350°(standard: 350°)

Feed rocking eccentric cam: Upper dead point of the eccentric cam 135°(standard:135°)

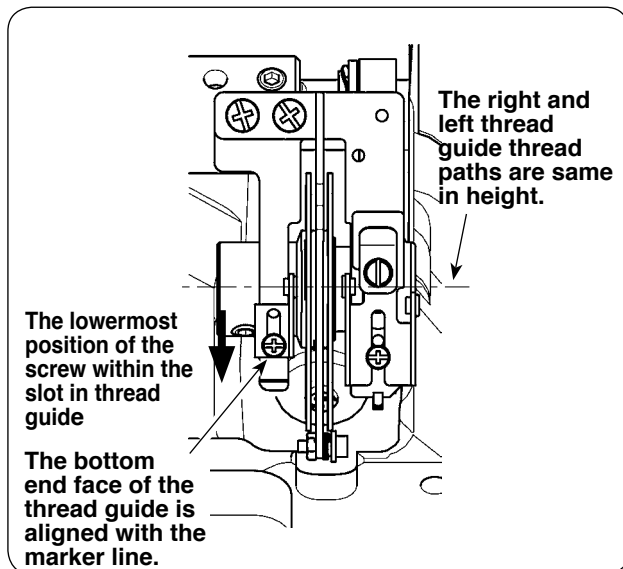
② Looper thread cam timing: Looper thread comes off the looper thread cam in the middle between the lower end face and upper end face of the looper.

[Adjusting the looper thread cam]

Adjust so that thread comes off from the highest point of looper thread cam ② when the top end of left needle ③ is aligned with the underside of looper ④ while the needles are coming down. Then, tighten setscrews ①.

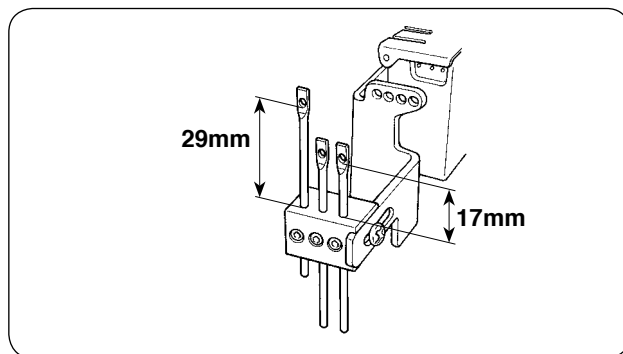


③ Hauling amount of the looper thread cam



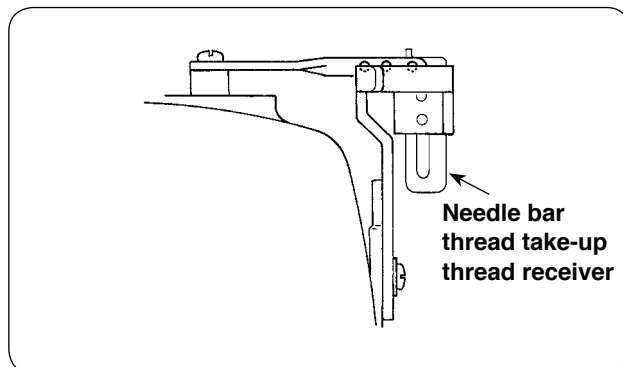
The lowermost position of the screw within the slot in thread guide
(Standard: The upper marker line aligns with the lower end face of the thread guide)

④ Matchstick height



	Matchstick height
Right needle	17mm
Left needle	29mm

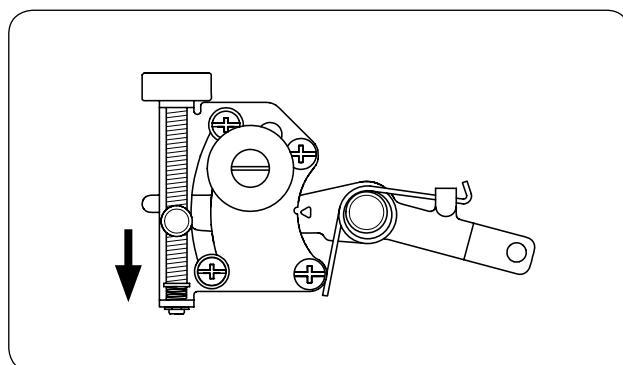
⑤ Needle bar thread take-up thread receiver



The needle bar thread take-up thread receiver aligns with the top end of the needle bar thread take-up when the needle bar is in its lower dead point.

⑥ D claw (standard: B claw)

⑦ Differential feed ratio



Slightly stretch the material.

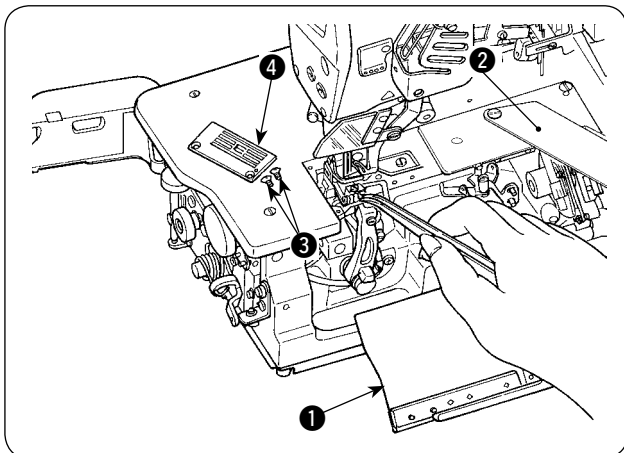
VII. MAINTENANCE

1. Cleaning the sewing machine



WARNING :

To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.



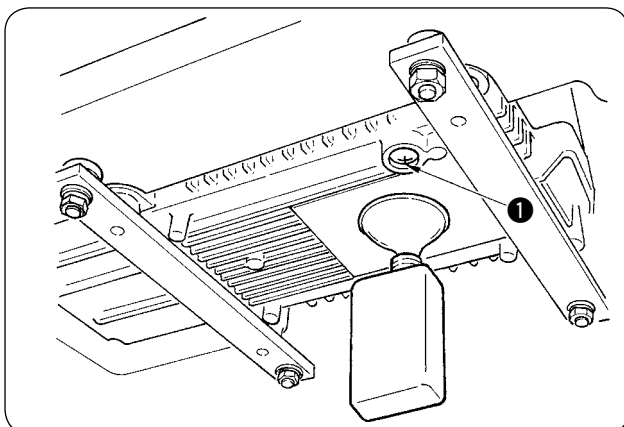
Open front cover ① and slide cover ②, loosen screws ③, remove throat plate ④, and clean the grooves in the throat plate, those in the feed dogs, and the peripheries. After cleaning, fix throat plate ④ with setscrews ③.

2. Replacing the lubricating oil



WARNING :

To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.



In case of the new sewing machine, replace the lubricating oil (JUKI GENUINE OIL 18) with new one after using it for approximately one month. Then replace the lubricating oil every six months.

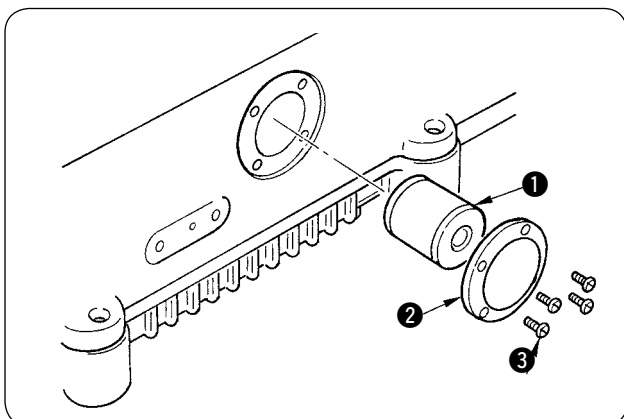
- 1) Set a container to receive the lubricating oil under drain screw ①.
- 2) Remove drain screw ①. The lubrication oil is drained.
- 3) After the drain, wipe out the oil and attach the drain screw ①.

3. Inspecting and replacing the oil filter



WARNING :

To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.



Normal lubrication cannot be performed if dust collects in oil filter ①. Inspect it every 6 months.

- 1) Remove filter cap ②, and draw out oil filter ① to inspect it.
- 2) When oil filter ① is clogged with dust, replace it with a new one.
- 3) After the replacement, fix the filter cap ② with screws ③.



When removing the oil filter cap, lubricating oil collected in the filter will leak out. So, be careful.